The deck contains two 14-foot lanes, with an additional one and one-half foot safety curb and handrail on each side.

The bridge is designed to withstand some of the toughest attacks of nature. Gusts of winds of 150 miles per hour from the fierce Pacific storms that occasionally batter the coast still leave the bridge with a safety factor. The concrete piers are built with an eye toward the river flood speed of nine miles per hour when whole trees sometimes are swept along by the raging water.

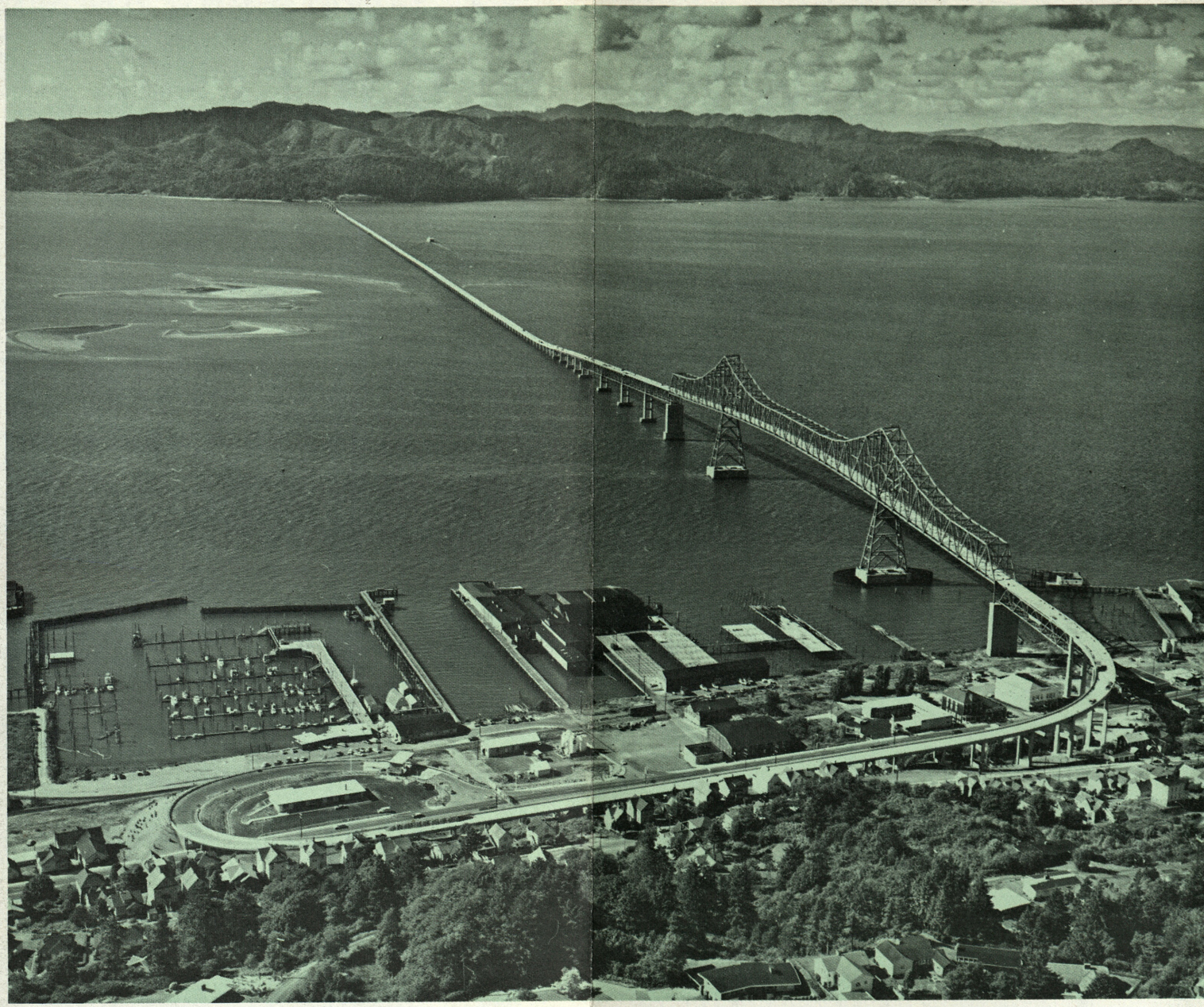
PROJECT STARTED

On August 9, 1962, Oregon's Governor, Mark O. Hatfield, turned the first shovelful of dirt on the river bank in Astoria marking the official start of the project. The actual construction work began on November 5, 1962.

Several interesting items involved in the construction of the bridge are the following. There were 48,500 cubic yards of structural excavation; 158,785 linear feet of steel piling; 134,090 linear feet of timber piling; 76,496 linear feet of 14-inch prestressed concrete piling; 38,772 linear feet of 48-inch round prestressed concrete piling; 97,995 cubic yards of concrete; 6,005 tons of metal reinforcing; 12,500 tons of structural steel; 43,290 linear feet of aluminum parapet rail; and 440,000 board feet of treated lumber.

The toll booths are located on the Oregon side of the bridge, with travelers in either direction paying their tolls here. Also located in the toll plaza complex is an Administration Building which houses, among other things, a Travel Information Center. This center gives aid to travelers in planning their trips.

THE ASTORIA BRIDGE



facts about the bridge

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The Astoria Bridge, which was formally dedicated August 27, 1966, stretches 4.1 miles from Astoria, Oregon, across the mouth of the Columbia River, to Point Ellice, Washington. It has what is believed to be the longest continuous three-span through truss series of any bridge in the world.

The Columbia River was discovered by Captain Robert Gray, a Boston fur trader, on his second voyage up the Pacific Coast in 1792 and named after his ship, the Columbia **Rediviva.** It was in 1811 that Astoria, the site of the first permanent settlement in the Oregon country, was established by men of the Pacific Fur Company, owned by John Jacob Astor.

EARLY HISTORY

North and south traffic across the mouth of the Columbia River had been a problem for years and it wasn't until 1921 that scheduled ferry service from Astoria to the Washington side was established. Following the end of World War II in 1946, the operation of the ferry system was taken over by the State of Oregon with operational control being assigned to the State Highway Department.

A bridge linking the two states at this point had been under discussion for many years and as motor vehicular traffic increased the need became ever more imperative. In 1953, through the cooperative efforts of the two states, a fund of $50,000 was authorized to conduct a feasibility study. In 1957, the Legislatures of the two states each appropriated $100,000 for preparing complete and final plans for the bridge.

Governor Mark O. Hatfield signed into law House Bill No. 1457 authorizing the sale of $24,000,000 in bonds and providing for construction of the bridge, the imposition and collection of tolls for use of the bridge, and authorizing any other necessary action in connection with the bridge. Washington enacted Chapter 209, Washington State Session Laws of 1961 authorizing that State's participation in the project. On September 15, 1961, the Oregon and Washington State Highway Commissions entered into an agreement to construct the bridge.

OREGON APPROACH

From the south, the new section of US101 begins at a toll station just off Astoria's Marine Drive and curves counterclockwise through a full 360 degrees as the Astoria approach rises to the ship channel. It then makes a long leap high across the main ship channel near the south river bank. Here it descends to 25 feet above sea level for more than 10,000 feet across the sometimes dry Desdemona Sands, then climbs briefly again for 49 feet of vertical clearance over the north ship channel before descending again in a brief Washington shore approach.

The Astoria approach utilizes prestressed concrete beam spans set on concrete piers, located to avoid overloading the slide-prone Astoria hills. From its beginning in a turn north off Marine Drive, the approach rises in a gradual curve, crosses Marine Drive once, continues the curve in an easterly direction, still gaining altitude, and recrosses Marine Drive a second time on roughly a north-south axis.

At this point, a steel deck truss section carries the roadway to the 2,464-foot three-span through truss section across the main channel. Crossing the main ship channel, the lowest steel member of the center span is nearly 200 feet above mean low water and stretches 1,232 feet between the two steel towers supporting the center span of the three-span continuous through truss, thus providing clearance enough to float the U.S. Navy's biggest battleship under the bridge at high tide. The towers are mounted on concrete piers protected by timber piling fenders, leaving a ship channel 1,070 feet wide. The concrete piers extend to 70 feet below mean sea level and some of the foundation pile under the pier extend another 190 feet below the concrete to 260 feet below mean sea level.

WASHINGTON APPROACH

From the north end of the three-span through truss, the roadway descends by steel deck truss and steel plate girder sections to an elevation 25 feet above mean sea level, then proceeds across Desdemona Sands. Here 140 prestressed concrete deck spans, 80 feet long rest on prestressed concrete piling, each of which are four feet in diameter.

As the 11,200-foot viaduct approaches the seldom used north ship channel, the span length increases to 150 feet and steel plate girders on concrete piers again raise the roadbed. Here seven 351-foot-long steel through truss spans cross the channel, providing clearance of 49 feet in height and 335 feet in width at mean low water under the center span. At this location, the concrete piers are the deepest, extending to 85 feet below mean sea level. Piles which support the pier extend another 51 feet below the bottom of the pier to a total of 136 feet below mean sea level. A 150-foot steel girder span carries the roadway down to the Megler approach.